FAA | AVIATION NEWS

SEPTEMBER 1965

FEDERAL AVIATION AGENCY

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FAA | AVIATION NEWS

F E D E R A L A V I A T I O N A G E N C Y

VOL. 4, NO. 5 SEPTEMBER 1965

COVER

Unless a pilot has
an instrument rating,
he should be sure that there
is VFR weather on both
sides of the overcast.

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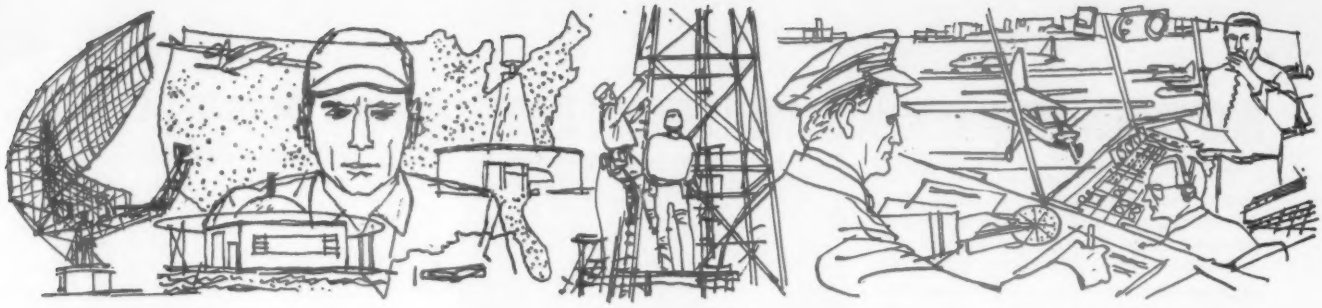


GENERAL AVIATION PILOT EDUCATION PROJECT IS UNDER WAY

A major effort designed to prevent accidents in general aviation is now under way. The Flight Safety Foundation kicked off Project GAPE last month by contacting thousands of private aviation organizations and air-minded individuals, while the FSF president began a series of speaking engagements.

A basic theme of Project GAPE—General Aviation Pilot Education—is education, not regulation.

Joseph D. Caldara, a retired Air Force major general, presented a slide-illustrated talk on "The New Flight Safety Program for General Aviation" to three groups in the South—Flying Clubs International at Ft. Lauderdale, Fla., Flying Physicians Association at Miami Beach, and the FAA Southern Region headquarters in Atlanta.

The objective of Project GAPE, Caldara explained, "is to reduce the aircraft accident rate of general aviation pilots by developing and fostering the professional approach to flying. Our various services and far-flung airlines demand professionalism right across the board. It has to be that way in order to meet the inherent risks of flight. . . .

"Proper education is the foundation. Supervised application of that education will create a desire to practice self-discipline. Those three factors are the tools that must be used to foster the professional approach."

Project GAPE became a reality when the FAA awarded the FSF a $268,635 contract in July to develop a program to prevent general aviation accidents, to encourage the upgrading of pilot proficiency, and to achieve greater utilization of aircraft. FSF will review its activities and progress in a series of reports to the FAA beginning Oct. 1, 1965, and ending Sept. 30, 1966.

To bring its aviation safety message to the men and women who fly and service America's general aviation aircraft, the FSF is seeking volunteer organizations to serve as the nucleus of the General Aviation Pilot Education Project in each area.

These volunteer groups will include aircraft manufacturers, state and local safety officials, flying clubs, flying schools, fixed base operators, airport managers, special flying organizations, and others with a special interest in aviation safety. Volunteer groups are being asked to furnish the FSF with information regarding meetings where safety presentations can be made. In addition to seeking to meet with aviation audiences, the FSF wants to make GAPE presentations at civic club meetings and other places to reach professional men, businessmen, and others who own and fly aircraft, but may not attend all aviation meetings.

The lively GAPE presentation includes a variety of visual devices, including films. A safety kit will be sent out to all participants each month including safety messages in the form of cartoons, safety bulletins, accident summaries, posters, and the like.

In his talks last month, the FSF president attributed the rate of general aviation accidents to "one basic cause factor—lack of proper education!"

Pointing out that for the past six years small fixed-wing aircraft accounted for 97 per cent of all accidents, Caldara compared the accident rate of general aviation to that of the Air Force. He selected the last decade for his comparison—1954 through 1964—and explained that many features were engineered into private aircraft to increase safety during that period.

"Communication and navigation systems were devised that simplified the tasks of the pilot and should have cut down the general aviation accident rate," he said. "Note, please, I said 'should.' Instead, the rate for private flying was reduced by only 18 per cent during that period, whereas the United States Air Force experienced a rate reduction of 82 per cent during the same span."

Caldara pointed out that it is not the new pilot "with the freshly issued private ticket who is involved in most accidents. And it isn't the youngsters, either. Mature people in the 30 to 45 and up age bracket account for some 85 per cent of all general aviation accidents."

General Caldara explained how he expects Project GAPE to attack the general aviation accident rate "right at the working level—with the men and women who are maintaining and flying the light planes. The problem can be solved by reaching these people while they are still on the ground—by direct education in safety—in other words, safety education from the ground up."

The FSF president stressed the need for the private pilot to receive aviation education on a "continuing basis."

"His initial ground schooling may or may not have been quite complete," he said, "but learning just enough to pass the written examination for his FAA license does not constitute a well-rounded aeronautical background."

18 Area Managers to Bring FAA Closer to Public

FAA Administrator William F. McKee has approved the selection of 18 highly qualified Agency executives to serve as area managers throughout the 48 states.

These positions were established as an integral part of the Agency's subregional concept which provides for further decentralization of the management of the FAA's Flight Standards, Air Traffic, Airway Facilities, and Airport functions. The new arrangement will make possible faster decisions in areas of vital concern to the aviation community. FAA foresees many advantages in bringing FAA operating people closer to the public.

Area managers take office on or before Sept. 13 in the following 15 areas: New York, Boston, Washington, D. C., Cleveland, Miami, Atlanta, Memphis, Houston, Fort Worth, Albuquerque, Los Angeles, San Francisco, Salt Lake City, Denver, and Seattle.

The effective date in Chicago, Minneapolis, and Kansas City is Oct. 3.

INSPECTION REMINDERS ARE AVAILABLE TO PILOTS

The FAA recommended last month that owners and operators of all general aviation aircraft use the new inspection reminder devised by the Agency.

The sticker was designed to fill a need expressed by the aviation community for a visual reminder to indicate when the aircraft's periodic inspection becomes due. Its use is not mandatory, however.

The Agency also noted that a large number of inspection violations are inadvertent and might not happen if a reminder is placed so it will be conspicuous during preflight inspection.

Normally, the periodic inspection reminder will be issued at the time of an airworthiness certification. To assist owners and operators who do not have the new inspection reminder, the FAA has asked for the cooperation of authorized inspectors, airframe repair stations, and aircraft manufacturers who perform periodic inspections. They have been asked to issue the reminder upon request and to amend the date, or issue a new reminder, when they perform the periodic inspection.

Aircraft records should be consulted to determine when the next periodic inspection becomes due. For example, if aircraft records indicate that the last periodic inspection was performed June 1, 1965, the reminder will indicate the next one is due July 1, 1966.

FEDERAL AVIATION AGENCY
INSPECTION REMINDER
The next periodic inspection of this aircraft required by Federal Aviation Regulations is due:
DATE
FAA Form 2912 (2 - 65)
OBSOLETE PREVIOUS EDITION

The new inspection reminder has an adhesive back and should be pressed into place in a spot that will be conspicuous when you preflight your plane.

Lost or destroyed reminders may be replaced by contacting an inspection facility or an FAA inspector; no charge.

Free copies of FAA AC 91-11, describing the new periodic inspection reminder, are available from FAA.

Maps in Tower, Fire Station Speed Rescue Efforts

When the controller in the tower, left, presses a button it lights up the grid map in the fire station, center, and the fire engine can leave immediately for the exact spot where the plane crashed.

Detroit Metropolitan Airport officials, recognizing the need for instantaneous crash alerting, have installed an electronic device to pinpoint fires and accidents and direct rescue and fire fighting equipment to any part of the airport in a matter of minutes.

The gear consists of two grid maps of the airport, one located in the tower and the other in the crash truck garage. When the control tower operator opens the glass door covering his grid map, an alarm sounds in the garage and the doors open automatically. When the controller presses the grid button on his map, a corresponding light blinks on the grid map in the garage to show the crash crew the exact location of the accident or fire.

Crash trucks are kept warmed up 24 hours a day by an external electrical device and can be started and accelerated to 50 m.p.h. in 50 seconds. They carry water, foam, chemicals, and all the usual necessary equipment. They also can spew 1,000 gallons of foam a minute. One truck is outfitted to spread a 30-foot wide swath of foam on runways for emergency landings.

Contracts Let for SST Engine Prototypes; Airframe Designs

Contracts for construction of prototype SST engines and completion of airframe detailed design have been signed by FAA to implement the next phase of the supersonic transport program recommended to Congress by the President.

Contracts signed by the FAA last month with two airframe manufacturers (Boeing and Lockheed) and two engine manufacturers (General Electric and Pratt & Whitney) run from July 1, 1965 to Dec. 31, 1966.

The initial period of the 18-month $140 million phase is being funded under a previous appropriation. The President asked Congress last month for $140 million to finance the next phase.

The contracts call for the airframe companies to submit designs for Government-airline evaluation of progress in November 1965, and for both airframe and engine contractors to submit detailed proposals containing both design and refined cost information for exhaustive evaluation in October 1966.

Under the contracts, airframe manufacturers will prepare comprehensive and detailed technical proposals for the follow-on program to fabricate and test for 100 flight hours two pre-production prototype SST aircraft; engine manufacturers will construct and test prototype engines, and will prepare proposals to provide engines and necessary support in the same test period.

Brig. Gen. Jewell C. Maxwell will replace Gordon Bain whose resignation as SST director becomes effective Sept. 15.

HEARING ON AIR TRAFFIC TERMS

A public hearing on a Notice of Proposed Rule Making which would revise the definitions for the terms "air traffic control" and "air traffic control clearance" has been scheduled by the FAA for Sept. 20. It will begin at 10 a.m. in Room 510, FAA Building, 800 Independence Ave., S.W., Washington, D. C.

The proposed rule (Notice 65-11, dated May 14, 1965) was issued by FAA to provide a more exact definition and statement of the nature and purpose of air traffic control. It also sought to clarify the distinction between an ATC clearance and an ATC instruction.

Comments received on the proposal, FAA said, indicate that a hearing "should be held to give interested persons a further opportunity to express their views, either orally or in writing, on any of the issues raised in the notice."

PAUL SODERLIND RECEIVES FAA'S HIGHEST AWARD

Captain Paul A. Soderlind, director of flight standards for Northwest Airlines, last month was awarded FAA's highest honor—the Award for Extraordinary Service—for his outstanding research on turbulence and its effects on sweptwing jet aircraft.

Soderlind received the award from FAA Administrator William F. McKee in ceremonies at the Agency's Washington headquarters. McKee said, "All aviation owes Captain Soderlind a debt of gratitude. His contributions have materially increased the efficiency and safety of high altitude jet operation."

The citation accompanying the gold medal lauded Soderlind for providing the entire aviation industry with the most authoritative and understandable single source of information on jet turbulence penetration.

FAA Administrator William F. McKee, left, congratulates Captain Soderlind while Deputy Administrator David D. Thomas holds the citation presented with the Award for Extraordinary Service.

At Northwest Airlines, Captain Soderlind, as an outgrowth of his studies, developed a lecture program for pilots which thoroughly examined the limitations and capabilities of sweptwing turbojets in high altitude operations. His presentations covered the buffet boundary and the effects of altitude, speed, and weight; speeds for turbulence penetration; stabilizer drive stall; elevator capability and elevator forces; the autopilot in turbulence; the problems of negative "G" forces; control cues and control problems; and operations procedures.

International Cadets Welcomed to Nation's Capital

Some 140 international air cadets, representing countries in Europe, Canada, and Central and South America, last month concluded a 21-day visit with Civil Air Patrol wings in 22 host states in the U. S. All are students in air force academies or belong to aero clubs in their homelands where they learn flying and may be called upon to help out on the ground if an air disaster occurs.

While in Washington, they were welcomed by a message from President Johnson praising the CAP for its "enthusiasm, dedication, and self-sacrifice" and its strong desire to serve "a useful purpose in a troubled world." The Presidential message was presented by Michael Manatos, special assistant to the President.

Following a briefing at the FAA headquarters, some of the cadets took time out to check over a general aviation aircraft at Washington National Airport. James H. Prendergast, right, FAA safety education specialist, pointed out some of the procedures in a walk-around inspection to, from the left, Jose A. Vaquerano, El Salvador; Capt. Horst Wilhelms, German Air Force; and Richard Hobson, England.

New Agreement Provides Pilots With Aviation Weather Services

A formal agreement which updates all previous working arrangements between the Federal Aviation Agency and the Weather Bureau in the areas of aviation weather services and meteorological communications was signed last month by Secretary of Commerce John T. Connor and FAA Administrator William F. McKee.

The agreement delineates authority and responsibility in such areas as aviation weather observation, specialized weather forecasting for aviation, weather displays and communications systems, and weather research and development activity. As a result, duplication of effort will be avoided and greater economy and coordination will be achieved.

The joint working agreement is designed to enhance the jet-age effectiveness of both the Weather Bureau's National Meteorological Service System and FAA's National Airspace System.

Instructor Procedures Suggested For Checking Out Student Pilots

The FAA recommends that certificated flight instructors follow certain procedures when checking out student pilots for solo flights in single-place or single-control aircraft.

- The flight instructor should determine that the student pilot has received the instruction required by FAR subparagraph 61.63(a) for the category of aircraft concerned, or he should provide this instruction in an aircraft with dual controls. The instructor should familiarize himself with the aircraft's performance, controllability, and special characteristics by taking solo flights.
- The instructor should give the student a thorough checkout, including solo flights under his observation, in an aircraft which is equipped with dual controls that has performance characteristics similar to those of the aircraft concerned. An endorsement is required for all solo flights.
- The student can then be given a thorough ground checkout in the single-place (or single-control) aircraft for which qualification is desired. When the instructor is satisfied that the student can pilot the aircraft safely, he may endorse the student's pilot certificate for solo.

Flight instructors are required by FAR 61.177(b) to hold a category rating for any aircraft in which they instruct.

Procedures for single-place gyroplanes are covered in FAR 61.63(b).

FAA PLAYS ROLE IN CONQUERING OF MT. KENNEDY

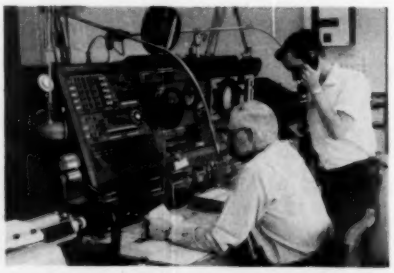
The conquering of Mt. Kennedy, until this year the highest unclimbed mountain in North America, was a triumph of many men. In addition to those who climbed up, down, and around the mountain surveying, mapping, and photographing, many others provided assistance.

James R. Heady, the FAA area manager at Yakutat, Alaska, was one who agreed to help. A triangular radio network was set up with the Yakutat Flight Service Station at one point, the Whitehorse, Canada, Aeradio Station at another, and the men on the mountain as the third. Contact with the expedition was made more than two weeks before Sen. Robert F. Kennedy set foot atop the mountain and planted mementos of the late President Kennedy. The 24-hour-a-day radio guard was continued for another two months.

Messages covered illnesses and shortages of food and other supplies, as well as routine communications to be relayed to points in Canada and the United States. Messages often had to be relayed between men on the top and men on the bottom. Weather information was transmitted so the crews could know whether they could work or whether they would have to spend a day or more in their sleeping bags waiting out blinding snow storms, 60 mile-an-hour winds, and subzero temperatures.

It is estimated that more than 1,500 communications or relays were handled by the Yakutat Flight Service Station for the Mt. Kennedy expedition.

Mt. Kennedy. (c) National Geographic Society.



Manning the facilities at the FAA's flight service station at Yakutat, Alaska, are air traffic specialists Rex Teig, left, and Willard Jones.

Cost-Saving TVOR Landing Aids Go Into Operation

The first two of a series of cost-saving trailer-mounted TVOR landing aids have been put into operation by the FAA at Shelbyville, Tenn., and at Saranac Lake, N. Y.

TVOR (an acronym for Terminal Very High Frequency Omnidirectional Radio Range) is an electronic air navigation facility which gives directional information to pilots of aircraft with appropriate equipment. Such facilities are placed for best approach guidance to an airport. Where possible, they also are positioned to provide en route guidance to pilots flying as far as 40 to 50 miles away.

Other locations currently scheduled for the TVOR trailer-mounted facilities are Muncie, Ind.; Cape Girardeau, Mo.; Galesburg, Ill.; Manhattan, Kans.; Manitowoc, Wisc.; Marion, Ill.; Mattoon, Ill.; Kalispell, Mont.; and Jackson, Wyo. All are expected to be in operation by this winter.

Each TVOR trailer, costing approximately $5,000, will save the Government an estimated $7,000 over the cost of conventional fixed housing, and also will provide the advantage of mobility so that changing air traffic conditions can be met. Additional savings in travel time and costs will be realized by installing electronic equipment in the trailers at central rather than individual field locations.

Each trailer-mounted TVOR will be towed to a selected site, the wheels removed and attached to a prepared concrete base. The wheels will be returned to a central FAA regional location for further use.

As of Jan. 1, 1965, the FAA was operating a total of 85 TVOR facilities, all with built-in-place housing.

Change in FARs Requires Pilot Schools Keep Records One Year

A recent amendment to Part 141 of the FARs requires certificated pilot schools to keep certain records for only one year. This will eliminate the past practices of retaining records indefinitely.

The amendment calls for each certificated pilot school to keep a current, accurate, and individual record of each student's participation and accomplishments. This includes a chronological log of instruction, attendance, subjects covered, tests, and test grades.

When a student completes the course or is graduated, an authorized representative of the school will certify the record which will be kept by the school for one year.

NEW PUBLICATIONS AVAILABLE

Several new FAA publications are now available to the public. Those marked "free" are available from the FAA, Distribution Section, HQ-438, Washington, D. C. 20553; "for sale" items are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402.

The publications are:

- *Summary of Airworthiness Directives for Small Aircraft.* Jan. 1, 1965. Vol. I; GPO, $3.00 domestic; $4.00 foreign.
- *Summary of Airworthiness Directives for Large Aircraft.* Jan. 1, 1965. Vol. II; GPO, $3.50 domestic; $4.50 foreign.

The airworthiness directives are now summarized in two volumes, one covering small aircraft and the other large aircraft. Each volume may be purchased separately on subscription which consists of the basic volume plus annual supplements. Free mailing list service for the bi-weekly AD cards is available from the FAA *on request* as in the past.

- Part 137, *Federal Aviation Regulations, Agricultural Aircraft Operations;* GPO, 20 cents.
- *International Flight Information Manual;* Volume 13, April 1965; GPO, $1.25.
- *United States Civil Aircraft Register;* AC 20-6C, Jan. 1, 1965; GPO, $7.00.
- *Heliport Design Guide;* AC 150-5390-1, November 1964; FAA, free.
- *Air Traffic Patterns for IFR and VFR Aviation—Calendar Year 1965;* April 1965; FAA, free.
- *Glider Pilot Examination Guide—Private, Commercial and Flight Instructor;* AC 61-6A, May 1, 1965; FAA, free.

RADIO FAILURE? NO SWEAT!

With the exception of watching the fuel gauge needle reach over to shake hands with "Empty", possibly the most hopeless feeling pilots get is to have an in-flight radio failure when the weather has closed in.

The first thing to remember is not to panic; there are many people to help you. Certain procedures have been prepared to take care of just such a situation.

Since a complete radio failure frequently means an electrical failure, you might check several things. For instance, one of the circuit breakers might have popped out. Check the one marked radio or communications. Try pushing it back in. If it pops out again, forget it. If you hold it in, it is like putting the proverbial penny in the back of a fuse and could result in even more serious trouble.

Sometimes a radio failure is nothing more than a stuck mike button. This could happen while flying with the mike on your lap, or by getting the mike button caught in the mike holder.

Check your mike and headset plugs since it is possible that one or the other could have come loose. There is also the possibility that some dust has caused the radio failure. Try to overcome this obstacle by rechanneling.

It is also possible that the cause of the failure is because you have reached the extreme range from the ground station. You might also check your tuning accuracy and mike selector.

You can be quite sure that when your ammeter shows a constant discharge, you won't have communications very long. You should monitor electrical loads and turn off everything not needed to keep you in the air; turn them back on again when they are needed.

If a radio failure takes place while flying in VFR conditions, or if VFR conditions are encountered after the failure, you should continue the flight under VFR and land as soon as practicable.

Should the failure occur in IFR conditions, and if you can't continue the flight under VFR (as specified above), you should continue the flight to the original destination.

Route. The flight should be continued along the route specified in the last ATC clearance received or the route that ATC has advised may be expected in a further clearance. If neither of these has been specified, continue along the route filed in your flight plan.

Altitude. You should continue the flight at the highest of the following altitudes or flight levels:

- The altitude or flight level specified in the last ATC clearance received,
- The minimum altitude for IFR operations, or
- The altitude or flight level that ATC has advised that you may expect in a further clearance.

Climb. If you have to climb to a higher altitude, you should do so in accordance with the last ATC clearance received. At the time or place necessary to comply with the minimum altitude for IFR operation, you should climb to that minimum. If this is not possible, climb to the altitude or flight level at the time and place included in the "expect-further-clearance" instruction.

If holding instructions have been received, depart the holding fix at the expected further clearance time received, or, if an expected approach clearance time has been received, depart the holding fix so as to arrive over the fix from which the approach begins as close as possible to the expected approach clearance time.

When making your descent from the en route altitude or flight level, you should begin your descent at the fix at which the approach begins. You should not start it before the expected approach clearance time, if one has been received. If none has been received, begin your descent at the ETA shown on the flight plan, as amended with ATC.

These problems can usually be avoided if you keep your radio in good condition. Most radio failures would never occur if, from time to time, correct preventive maintenance work was done.

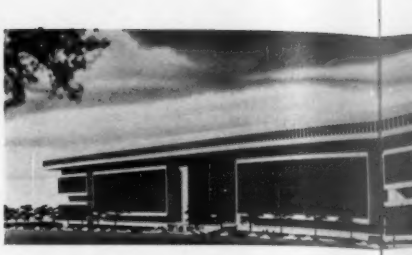
The *Federal Aviation Regulations* require each person performing a periodic or 100-hour inspection to inspect the following components of the radio group:

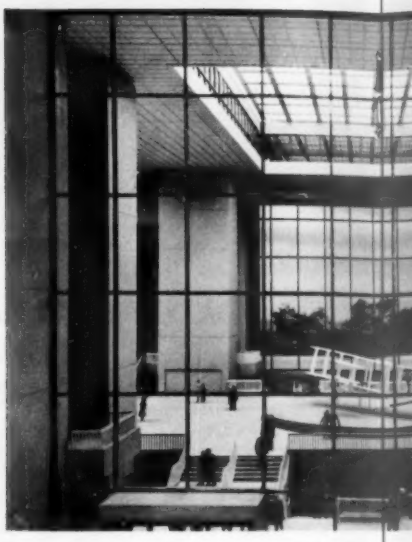
- Radio and electronic equipment for proper installation and secure mounting.
- Wiring and conduits for proper routing, secure mounting and obvious defects.
- Bonding and shielding for proper installation and condition.
- Antenna, including trailing antenna, for condition, secure mounting and proper operation.

Don't settle for meeting minimum legal requirements. Check your radio equipment frequently.

America's Priceless Aircraft at Smithsonian

National Air Museum Staff Dreams of New Building





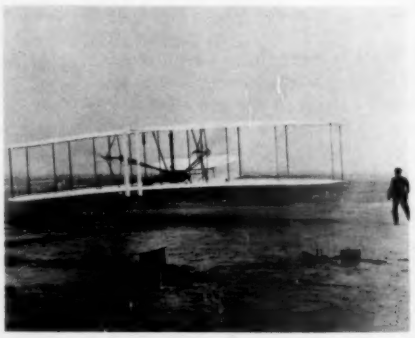
The history of aviation is reflected in the National Air Museum's priceless collection of aircraft.

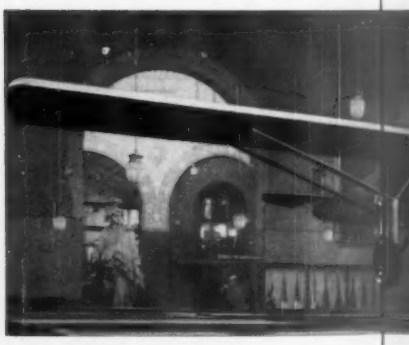
Ranging from the actual plane flown by the Wright brothers in 1903 to the world's first supersonic aircraft, the collection brings together the airplanes that have made aviation history in this country.

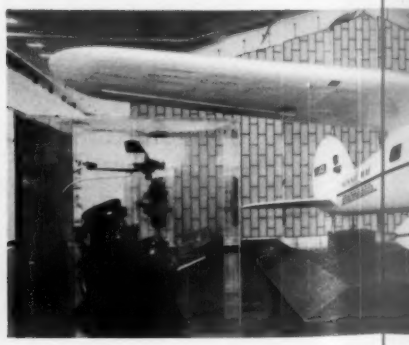
Of the eight planes shown here, all but the P-38 and the T-2 are among the 23 planes now on display in two separate buildings of the Smithsonian Institution. Some 175 others are stored in warehouses in Maryland. (*FAA Aviation News*, August 1964.) Still others are promised to the Air Museum at a later date.

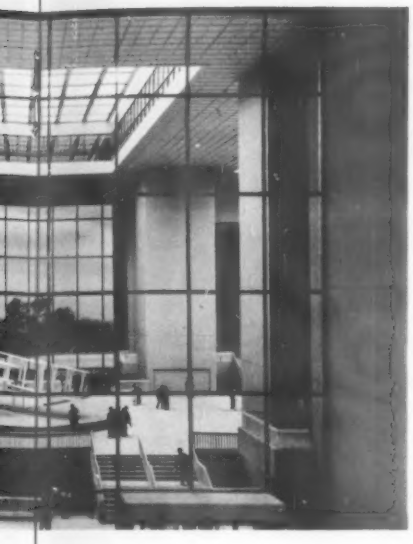
S. Paul Johnston, director of the Smithsonian's National Air Museum, looks forward to the time when he and his staff will have a new building large enough for all the types they would like to display. An architectural study financed by Congress has been completed and a building site, just northeast of the FAA headquarters building in Washington, has been designated.

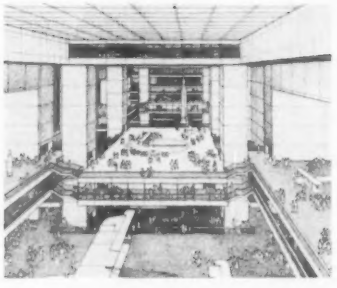
The Museum's aircraft collection is described in the first new edition of *The National Aeronautical Collections* published in almost a decade. The new 168-page 10th edition is available for $2 from the Smithsonian Institution, Washington, D. C. 20560.





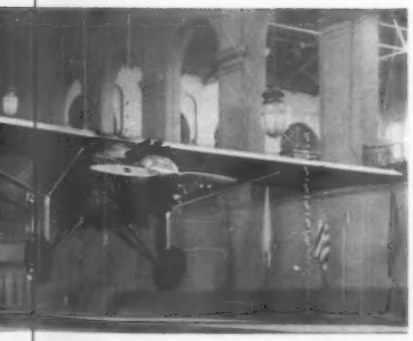


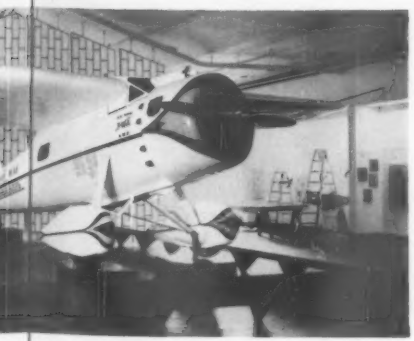




These architectural concepts for the proposed new building for the National Air Museum were financed by the initial planning funds provided by Congress in 1963. The site, directly across the Mall from the National Gallery of Art and within view of the Capitol, was designated in 1958.

The National Air Museum collection includes, top row from the left, the plane used by the Wright brothers at Kitty Hawk, N. C., in December 1903 when powered, controlled, and man-carrying flight in a heavier-than-air craft was achieved for the first time; Charles A. Lindbergh's *Spirit of St. Louis* which was flown by "Lucky Lindy" on the first solo flight across the Atlantic; one of the famous Jennys built as a World War I training plane and used extensively in postwar years; the T-2, which not only set a series of aloft endurance tests, but also made the first nonstop transcontinental flight. Bottom row, left, a P-38 *Lightning*, initially flown in the late 1930s, represents the intensive development of aviation spurred by World War II; Wiley Post's *Winnie Mae* in which he twice set round-the-world records, 1931, 1933; XP-59A *Aircomet*, first jet-powered airplane built and flown in America; Bell X-1, world's first supersonic airplane.

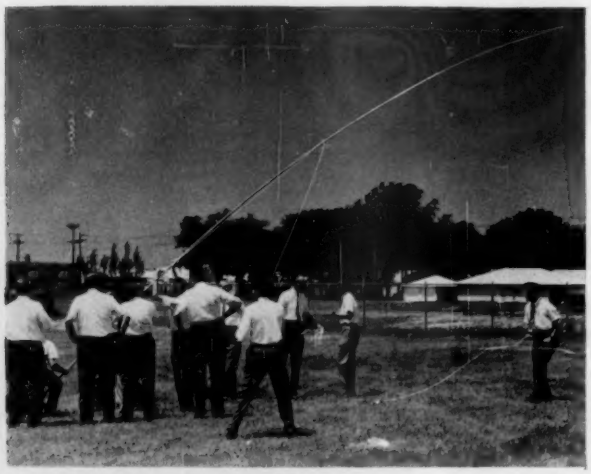


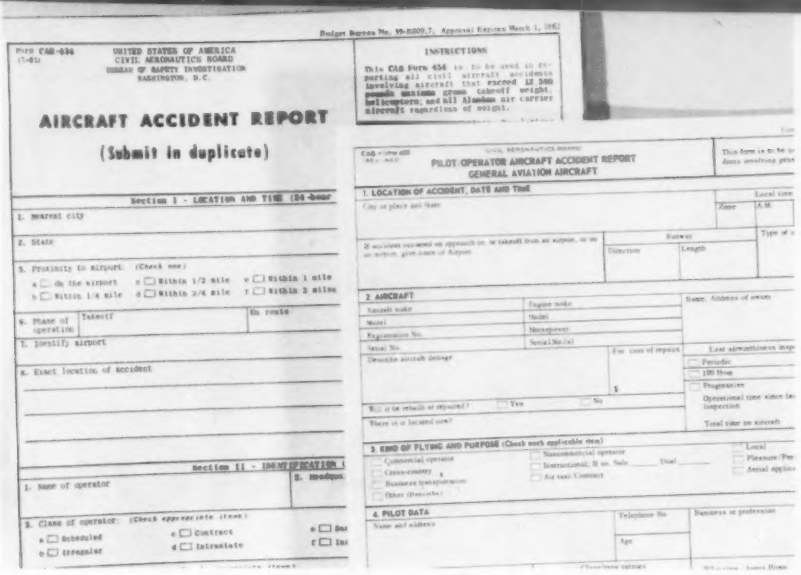


'Flyaway' Kit Aids FAA Accident Investigators

Whenever FAA investigators are called to a crash scene, they have at their fingertips the use of a specially designed "flyaway" kit. Although the total kit weighs close to a ton, it is built in sections so investigators may use only the parts necessary in a particular case. Each kit contains medical supplies, three 450-watt single side band transceivers, 10 FM walkie-talkies, 10 spare batteries, three battery chargers, two phone patches, five portable tape recorders, and three portable engine generators. There are also 40 sets of orange coveralls for easy identification of air crash investigators. Shelter tents provide protection for the communication equipment set up at field headquarters.

Top right photo, an FAA inspector and flight surgeon check supplies; right, an inspector uses a single sideband radio to contact regional headquarters; below, FAA personnel rehearse the positioning of a 35-foot antenna which is used by rescue and investigative workers in remote areas.





AIRCRAFT ACCIDENT REPORT

(Submit in duplicate)

INSTRUCTIONS

PILOT-OPERATOR AIRCRAFT ACCIDENT REPORT
GENERAL AVIATION AIRCRAFT

FAA, CAB SHARE INVESTIGATIVE CHORES

If you become involved in an automobile accident, specific rules and regulations require you to notify certain people of the accident and also call for filling out certain forms. The same holds true if you are involved in an aircraft accident.

All accidents must be reported to the Civil Aeronautics Board or the Federal Aviation Agency. Operators filing reports are required to use CAB Form 453 or 454 whether reporting to CAB or FAA.

The CAB is required by law to investigate all accidents and to determine the probable cause. In practice, CAB investigates certain accidents and has delegated its investigative power to the FAA in others, generally small plane accidents. The FAA also has responsibility to participate in all accident investigations.

Immediate notification is required where there is a fatality or serious injury, a midair collision, an aircraft overdue, or any flight hazard, including a fire.

General aviation accidents are investigated by the CAB (1) when there is a fatal injury, (2) when the aircraft weighs more than 12,500 pounds, or (3) when a rotorcraft is involved. The CAB also investigates accidents involving aircraft weighing less than 12,500 pounds when operated by air taxi companies and other commercial operators of small aircraft.

Small aircraft accidents involving substantial damage (damage exceeding $300); damage affecting the structural strength, performance, or flight characteristics; or serious injury to an occupant or nonoccupant are normally reported to the FAA flight standards district office. This office investigates fixed-wing aircraft accidents for the CAB (1) if no fatality is involved, or (2) if the aircraft weighs 12,500 pounds or less.

A serious injury is one which:

- Requires hospitalization for more than 48 hours, beginning within seven days from the date of the accident.
- Results in a broken bone, except for simple fractures in fingers, toes, or nose.
- Involves lacerations which cause severe hemorrhages, or nerve, muscle, or tendon damage.
- Involves injury to any internal organ.
- Involves second or third degree burns, or any burns affecting more than five per cent of the body surface.

The CAB's determination of the "probable cause" is made from FAA reports in a large number of small plane accidents investigated only by the Agency.

Inasmuch as the FAA is responsible for certificating civil aircraft for airworthiness, and airmen for competency, it participates in the investigation of all accidents and, when needed, takes corrective action immediately.

Basically, the purpose is to determine:

- If there was a violation of the FARs.
- If the performance of FAA facilities or functions was involved.
- If the airworthiness of an FAA-certificated aircraft was involved.
- If the competency of an FAA-certificated airman or air agency was involved.

Information required in accident reports includes the location; date; time; aircraft make, model, registration number, and nationality; names of operator and crew; number of persons involved; injuries of each person; and weather conditions. The report should also include a description of the circumstances surrounding the accident; the point of last departure and destination; and a description of any explosives, radioactive materials, or other dangerous articles carried.

Even though there is no legal requirement for general aviation pilots to report "occurrences" or "incidents" (say a scraped wingtip involving less than $300 damage), the FAA encourages pilots to make such reports so the Agency can concentrate its safety activities in the proper areas.

Should a major aircraft accident occur, both CAB and FAA accident investigators quickly appear on the scene. Arriving about the same time from an associated FAA regional facility is a specifically designed "flyaway" kit which has been airlifted to an airport close to the accident and trucked to the scene. These kits, which weigh almost a ton and are made up of several sections, help facilitate the complex job of locating, identifying, examining, and removing widely scattered wreckage to warehouse facilities for thorough examination. (See opposite page.)

• *First of a series*

Wright brothers, 1903

FAMOUS FLIGHTS

1st New York-Philadelphia Flight Earns $10,000 for Swashbuckling Charlie Hamilton in 1910

By Dick Shea

At a time in history when a good brass bed cost only $22, a mirrored hard wood dresser $16, and a full course meal could be bought for less than a dollar, $10,000 could make a man rich. One Charles K. Hamilton would become rich.

Charlie Hamilton, a former balloonist, stunt man, and automobile racer, was seldom seen without a cigarette stuck between his lips. He was no enemy to whiskey and was partial to strong language.

In physical appearance he had the head of a poet—thick wavy hair, a high forehead, and a long determined chin. This fine head was betrayed, however, by two irregularities—two large protruding ears and a frail, small body that weighed at the most a hundred pounds.

Through this body of the aviator, however, the blood ran only cold. For Charlie Hamilton loved danger.

A proposed flying race—New York to Philadelphia and return—sponsored in 1910 by the *New York Times* and the *Philadelphia Public Ledger*, was made to order. And the $10,000 prize money also had a certain attraction. Thrill-seeking Charlie was not to be denied.

His flight was scheduled for a Saturday, but the day had come up cold and rainy so the flight was postponed. Sunday would be the day, but this decision was abandoned because Philadelphians would not put up with a plane landing in their city on the Sabbath.

The day finally chosen, Monday, June 13, 1910, broke grey and overcast with strong westerly winds. This was not to the pilot's liking. Hopes and expectations were already too high, however, to permit another postponement. The decision was made: Go.

The aircraft was the early Curtiss pusher biplane. Hamilton's schedule called for him to fly from Governor's Island in New York Harbor to Philadelphia and return. This 175-mile round trip was to be the longest cross-country flight ever attempted by an American airman to that time.

Charles K. Hamilton sat impassively in the "driver's seat." He was dressed in leather leggings, a leather jacket, and brown pants. Around his middle he wore several inflated bicycle tire tubes as a precaution in case he was forced down over New York Harbor. Inside his jacket, he carried the cargo—a manila envelope containing greetings from the governor of New York to the governor of Pennsylvania. He also carried 1,000 "peace bombs"—1,000 celluloid discs inscribed with the names of the two newspapers and a brief description of the flight. These were to be dropped to the crowds below "to demonstrate the possible uses of the airplane in war" though in what fashion nobody bothered to describe.

It was 7 a.m. and Hamilton started his engine. As the propeller whirled, the biplane gathered speed and headed across the military parade ground. The crowd started to cheer and then, suddenly, stopped. Above the engine's roar came a terrifying tearing sound. Bits of the propeller began to fly into the air. Hamilton cut the engine and the plane came to a stop.

The seven-foot propeller had cut into an engineering stake lying on the ground and shredded itself to pieces. Propeller difficulty, however, was a frequent occurrence of early flying. Another prop was quickly secured in place and at 7:36 a.m. Hamilton, casually puffing a cigarette, was airborne and heading west. He hoped to record "the greatest achievement of American aviation."

Hamilton's flight plan called for him to fly over New York Harbor, over the inlet enclosing Staten Island and thence to Elizabethport where he would pick up the tracks of the Pennsylvania railroad which would guide him to Philadelphia. At Elizabethport, he was also to pick up a special *New York Times* train loaded with reporters, photographers, and officials, as well as his wife and mother. The actual rendezvous came three miles out of the city, but from that point on the train kept pace with the airplane. For most of the trip Hamilton flew directly over or ahead of the train at a speed of about 45 m.p.h. and at an altitude of about 500 feet.

The trip was uneventful until Trenton. Here, according to the *New York Times,* Hamilton was supposed to climb to about 2,000 feet—an altitude which would permit him, in case of engine failure, to glide about 7,000 feet to a safe landing in the fields outside the city. But it was at Trenton that Hamilton and the good, grey, sober, and responsible *New York Times* parted company.

As they approached Trenton, the train slowed, anticipating that Hamilton would lose time as he climbed to 2,000 feet. The aircraft, however, kept its level attitude, and it soon became apparent that Hamilton had no intention of changing his altitude. In fact he dropped lower and then at 400 feet roared toward the center of the city. The hundreds of people on the rooftops of houses and factories—most of whom had never seen an airplane—clapped and roared with applause. Hamilton grinned, waved, and headed for Philadelphia.

At the landing area in North Philadelphia, a thousand policemen on foot and another 150 on horseback struggled to keep the waiting crowd of some 100,000, who were cheering and applauding, behind the ropes. A reporter at the scene wrote that when Hamilton's plane came into view there suddenly appeared "a sea of handkerchiefs waving over a host of heads." Hamilton was unable to resist the crowd.

Instead of landing, he pulled the plane up, and then for a full five minutes, he dipped, turned, and climbed in a series of flying stunts. The crowd exploded. Finally, at 9:26 a.m. he landed.

The trip back was anticlimactic. Even a forced landing at South Amboy, N. J., following spark plug failure had been anticipated. Nor was Hamilton perturbed when he ripped up another propeller in the marshy ground. Replacements for the prop and the spark plugs were brought from New York and put in place. The delay consumed about five hours. Hamilton took off again and reached Governor's Island about 6:30. Again the reception was thunderous. Whistles blew, lights flashed, and thousands and thousands of New Yorkers cheered and pushed and shoved trying to get nearer to him. Charlie Hamilton was the darling of the hour.

The New York to Philadelphia flight was Hamilton's golden moment.

He was to finish his flying career with two silver ribs, a plate in his skull, another plate in his shin bone, two broken shoulder blades, a jaw broken several times and a hide scalded in many places from a radiator that tore apart in a crash.

Hamilton continued flying for two years after his "golden moment," then disappeared from public notice. Four years after his historic flight, he was dead—a victim of tuberculosis. The press reports of his flight did not give his age. He was described only as "The Young Airman."

RULES OF THE ROAD

KNOW YOUR ALTIMETER

This is the seventh in a series on "Rules of the Road."

The altimeter is one of the most important and sometimes the least understood instruments in the general aviation cockpit.

This is reflected in the fact that almost 50 per cent of all pilots taking the written examination for an instrument rating show a lack of knowledge concerning the effect of atmospheric temperature and pressure changes on this instrument.

Many pilots also seem unaware of the rules covering altimeter settings in Part 91 of the *Federal Aviation Regulations*. These settings are essential to flight safety since the altimeter is used to determine as accurately as possible the altitudes or flight levels to be flown.

The altimeter is essentially an aneroid barometer, registering atmospheric pressure on a scale calibrated in terms of altitude. The effect on nonstandard atmospheric temperature and pressure change on this instrument is summarized by the adage, "Cold or low, look out below." When flying from warm air to cold air, or from high pressure to low pressure, the aircraft is lower than the indicated altitude, unless the altimeter is adjusted to compensate for the change.

To obtain a corrected reading, the altimeter must be set to correspond to the actual barometric pressure at the time and place of flight. A movable knob is provided for this purpose on most altimeters. A small window in the face of the dial shows the barometric pressure for which the instrument is set.

A correction also must be applied for variation in temperature. This can be done simply and quickly with a standard dead reckoning computer.

When properly set, the altimeter will indicate the approximate height of the aircraft above sea level. The height of the aircraft above the terrain then can be computed easily. It is the difference between the altimeter reading and the elevation of the terrain as shown on the navigation chart.

FAR Part 91 specifies that aircraft operating below 18,000 feet mean sea level must maintain cruising altitude by reference to an altimeter adjusted to the current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft. If there is no station within this area, the current reported altimeter setting of an "appropriate available station" must be used.

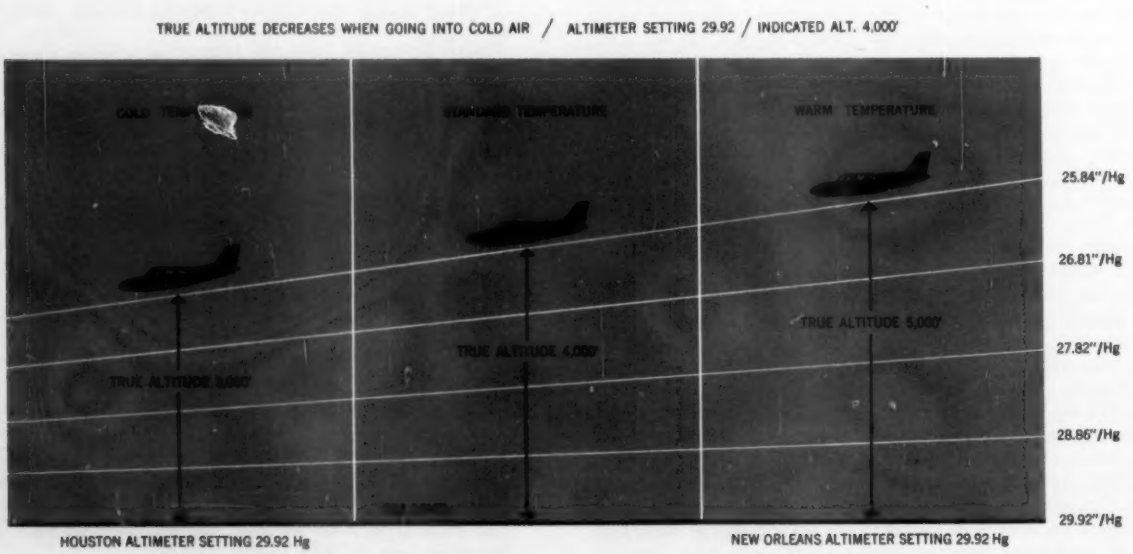
For aircraft not equipped with radio, the "elevation of the departure airport or an appropriate altimeter setting available before departure" is prescribed.

Aircraft operating at or above 18,000 feet MSL (flight level 180) are required to use the standard altimeter setting of 29.92. Use of this standard setting provides aircraft flying the jet routes with a common reference for indicated altitude.

Provision is made for separation between aircraft operating at or above 18,000 feet and those operating below that level. This is necessary since aircraft using the standard altimeter setting are below indicated altitude when atmospheric pressure is less than 29.92 and could conflict with aircraft using the corrected pressure setting.

Part 91 specifies flight levels which may not be used when atmospheric pressure is below 29.92. For example, from 29.91 through 29.42, the lowest usable flight level is 185 (18,500 feet). From 27.41 through 26.92, the lowest usable flight level is 210 (21,000 feet).

Provision also is made in Part 91 for adequate terrain clearance when the prescribed minimum altitude is above 18,000 feet and atmospheric pressure is less than the standard setting. . . . *J. L.*



Letters

FAA

FAA Aviation News welcomes comments from the aviation community. We will reserve this page for an exchange of views. No anonymous letters will be used, but initials will be withheld on request.

• Flight Instructor Publications

I would like to become an airplane flight instructor. Do you have a list of publications which would help me?

Initials withheld

Two FAA publications are presently available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., which will be helpful in preparing for the flight instructor certificate. These are, Advisory Circular 61-16, Flight Instructor's Handbook, *60 cents, and AC 61-14,* Flight Instructor Practical Test Guide, *10 cents.*

Another recommended publication is AC 61-11, Airplane Flight Instructor Examination Guide *which contains a list of recommended study material, a study outline, and sample test questions. A revised edition of this examination guide, now at the printers, will soon be available. A new publication that we believe will be helpful in preparing for this certificate is the* Flight Training Handbook *which is expected off the press soon.* FAA Aviation News *will announce the availability of both publications.*

• Uncontrolled Airport Approach

In *Federal Aviation Regulations* Part 91.117 or 40.364, or in any other current regulation, does the official interpretation require that the approach to an uncontrolled airport be approved instrument approach if the official weather and weather actually encountered are both clearly VFR?

In other words, must an IFR flight plan cancellation precede an approach conducted visually and not in accordance with the published IFR procedure?

Initials withheld

Concerning FAR 91.117, "Takeoff and landing under IFR," we refer you to FAR 91.75, "Compliance with ATC clearances and instructions," which states in part: "When an ATC clearance has been obtained, no pilot-in-command may deviate from that clearance, except in an emergency, unless he obtains an amended clearance. However, except in positive controlled airspace, this paragraph does not prohibit him from cancelling an IFR flight plan if he is operating in VFR weather conditions."

Therefore, even though the airport may be uncontrolled, but within controlled airspace, and the weather conditions VFR, no pilot-in-command may deviate from that clearance unless specifically authorized by ATC or unless the pilot requests cancellation of his IFR flight plan and has had his request acknowledged by ATC. Unless a pilot requests ATC to cancel his IFR flight plan, ATC must assume that the flight will proceed as planned, or as later amended, and that the instrument approach procedures prescribed for the airport of intended landing will be followed.

It is on this basis that traffic separation is provided for other IFR traffic which may be in the same area.

• Pat On the Back

In a day of diminishing professionalism, it is most refreshing to find this characteristic so eminently and consistently demonstrated by your FAA flight check inspectors. I am referring in particular to Messrs. Hedstrom, Harms, and Masterson, of your Wiley Post, Oklahoma City, office.

In my flying tests with the above named professionals, I was courteously dealt with as a human being, I was rigorously tested without fear or favor; I was, on occasion, rejected, as not being up to specification; I was carefully informed of my errors, and suggestions made for solution. Finally, in satisfying the "private" and "commercial" requirements, these gentlemen gave me two impressions: one, that I had achieved a most worthy goal; secondly, the great necessity of maintaining a ready state of competence.

May I underline the value of failing the first testing, as I am certain that in every failure, a life is saved. You have many letters from applicants who have failed, and who are complaining. Let them gripe. Your inspectors may complain, because in re-riding there is so much repeat work for them. Let them gripe, too. Standards have risen, and are rising, and the process of rejection, restudy and redemption, must become a vital part of this progress.

These remarks are generated, not from one who has slipped by lightly or easily, but from one who underwent repeated, grueling, and appreciated, testings.

William A. Boardman
Chaplain, Lt. Col., USAF

• Official Sunset

In determining night requirements for equipment, and en route and instrument approach minimums, does 30 minutes after official sunset for that area satisfy the FAR requirement of civil twilight as determined by the sun lying between 6 and 12 degrees below the horizon?

Initials withheld

Official sunset, which occurs as the sun passes from view over the horizon, is the time to display aircraft lights.

Civil twilight is that period between the time the sun has passed from view over the horizon and has reached a position 6 degrees below the horizon. The interval of time required for the sun to reach the 6 degree position is determined by the position of the observer with respect to latitude. In Alaska, for example, this period may be as much as two hours. If, for example, you are within 23 degrees of the North Pole, there are two days on which the sun does not pass below the horizon. It will be noted that section 91.73 of the FARs, "Aircraft Lights," contains an exclusion for Alaska.

Night, as defined in FARs Part 1, "Definitions and Abbreviations," means the time between the end of evening civil twilight and the beginning of morning civil twilight as published in the American Air Almanac, *converted to local time.*

This information is available from all U. S. Weather Bureau stations and from FAA flight service stations. Most newspapers also publish the times for official sunrise and sunset.

The night flight experience requirement for pilots-in-command who carry passengers recognizes the twilight situation in two ways. First, it provides a one-hour buffer after official sunset which permits the pilot not current in night operations to continue flight. Secondly, it requires that a pilot contemplating night operations and not meeting the night recency of experience acquire the five landings and take-offs under actual conditions of darkness. Thus, flights made within the one-hour period following official sunset cannot be logged for this purpose.

• Renewal

I have a friend who held a private pilot license in 1940 whose last logged time was in that year. His certificate has expired per regulations in effect at that time. He has shown an interest in taking instruction and regaining his certificate. Obviously, he must take the written examination and pass a third-class physical.

It is understood that any new requirements such as instrument time, 100-mile cross country, and so forth would have to be met and that proficiency suitable for the flight test would have to be established. But, can you tell me if the time logged as part of the previous certificate counts toward a new certificate requirement?

Initials withheld

Pilot experience credited toward an expired pilot certificate may also be credited toward meeting experience requirements for a new certificate. Any additional specialized experience requirements introduced since the expired certificate was issued will have to be met.

You are correct in your observation that sufficient recent flight experience will be necessary to establish a level of proficiency required to pass the private pilot flight test, in addition to completing the written test, and meeting the physical requirements.

We wish your friend every success in reinstating his pilot certificate.

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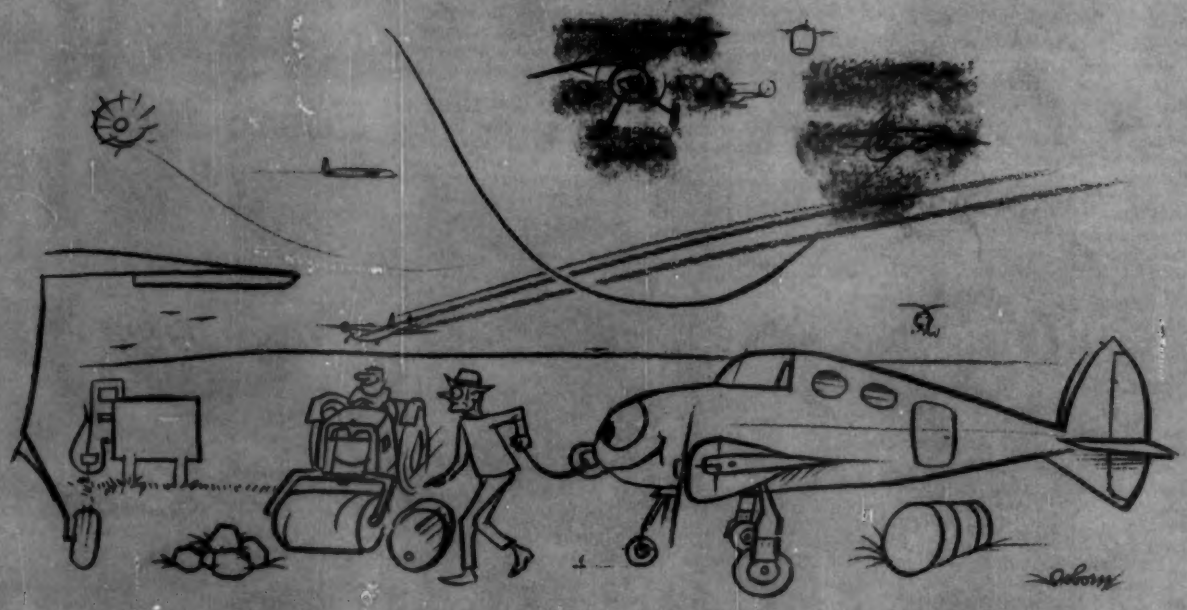

Both in the air and on the ground.